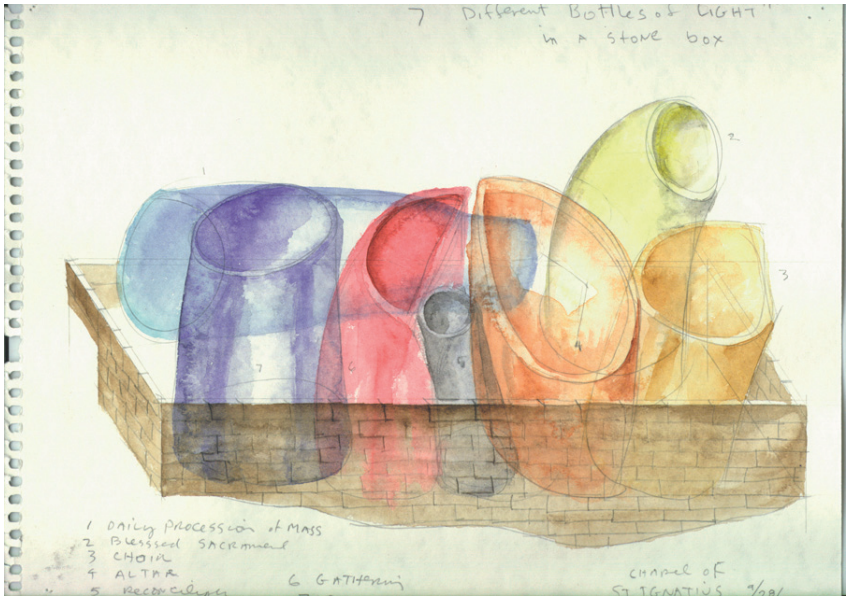
Altered space

Altered space: The transformative capabilities of colour and light in the architecture of Steven Holl and UN Studio

Fiona MCLACHLAN
Head of the Edinburgh School of Architecture and Landscape Architecture,
University of Edinburgh

Abstract

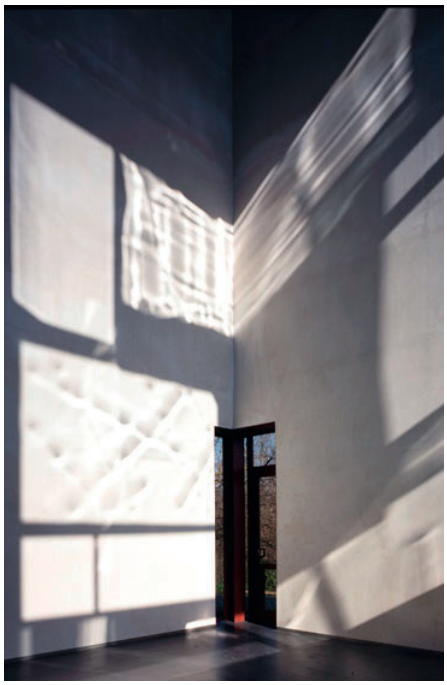
The paper will explore the transformative capabilities of colour and light in architecture through selected projects of two contemporary architectural practices. Colour, which is generated through the play of light, is never static and has the capability to be used as an instrument to tune and transform architectural space. Coloured glass has been used for centuries, although with the symbolism embodied in the window design as the primary intent and the interaction of the cast colours largely a secondary effect. Drawing on an interview with Ben van Berkel and Caroline Bos of UN Studio, based in Amsterdam, and considering the work of the American architect, Steven Holl, the paper argues that the metaphysical properties of reflected colour can be seen as instrumental to the synergic design of architectural space.



Steven Holl : Chapel of St Ignatius, Seattle
(Watercolour: Steven Holl Architects)

Two buildings within the oeuvre of the New York based architect, Steven Holl, particularly epitomize his use of colour and light and the interaction between them. The first, his chapel at St Ignatius, Seattle (1997) adopts white interiors, tempered by the use of roof-lit funnels, which gently tinge the internal surfaces as the external lighting conditions change. The perception of the space is transformed as light bounces against the curved surfaces, capturing the different qualities of light from north, south, east and west by a series of angled roof lights. The volumes are shaped to further modify the internal experiences as one moves through the church, and simultaneously correspond to specific aspects of Jesuit Catholic worship. Holl's analogy is of bottles acting as

containers in which light is captured and stored, with each volume differentiated in form and reflected colour.



Steven Holl: Cranbrook Institute for Science (Photo: Paul Warchol Studio)

Holl's entrance hall at the University of Cranbrook Institute of Science (1998) uses no colour other than that produced by the effects of light distorted through many different types of glass. Here the constantly changing effects are of sunlight and shade, of streaks, informal patterns and the occasional spectral projection through prisms built into the façade. These work in concert to animate the space as part of a highly experiential series of internal and external spaces. This is a subtle colour palette, the same base wall is modified in appearance solely by the instrument of light and the passing of time.

A key principle of Steven Holl's architecture is the "spatial energy" generated by the interaction of the body moving through space.[1] Central to this is his use of colour and light that allows each work to be open to interpretation by the mood and perception of the user. The experience is therefore not entirely predictable or under the control of the architect as would be the case using pigmented surfaces. Colours generated in this way while still entirely relative to light conditions, context and material surface are, by comparison with coloured light, essentially more stable.

A further condition employed in one of Holl's best known small buildings in the Sarphatistraat, Amsterdam (2000), is the use of reflected light from a pigmented surface or filter which is deliberately concealed, and activated by the play of light. Such devices project tinted light that moves across both space and surface. The colour attracts the eye, and obliquely reveals a hidden space beyond that which is immediately experienced, adding a layer of ambiguity. Holl further celebrates this element of doubt by using layers of different materials, some being perforated, some solid, some translucent and some clear. The layers seldom entirely align, and are sandwiched in different combinations, to distort the surfaces and indicate depth. Colour and light are therefore employed as part of an experiential, multi-sensory architecture, the architect deliberately abdicating a degree of authority to natural phenomena.

There has been a recent growth in the use of coloured light to transform architecture externally, spurred on by the ability to programme complex lighting combinations digitally. The Dutch architectural practice, UN Studio, has completed two department stores, the Galleria in Seoul, South Korea (2004) and Star Place, Kaohsiung Taiwan (2008).2 In both, projected light is used directly to distort and modify the appearance of the building by day and by night through timed pulses. Ben van Berkel relates the changing colour to the seasonal pulse of fashion in clothes, using the same metaphor of dressing for a proposed apartment building wrapped in

1 Holl, S. Taken from his lecture for the Jencks Award 2010 at the RIBA, London. 'Spatial energy being one of his five 'axioms' on architecture

2 UN Studio is led by Ben van Berkel and Caroline Bos

ribbons of steel in New York. In the case of the department stores however, the pulse is much faster than any seasonal variation in clothes. Through the constantly changing light, the authority of the building image is placed in some doubt. Who is in control of the image? Architect, or computer programmer?

Van Berkel admits that they had not entirely understood how easy it would be for the client to change the appearance, and so for the second building, the practice constrained the lighting design through a tighter contractual agreement, effectively legislating the colours and thereby ensuring their authorship.[3] There are inherent dangers for architecture in this drift towards brand and image over substance and materiality. Taken to its limits, architecture becomes mere lifeless surface by day, and by night, a "brandscape" for projected colour and light.[4] It may still be experiential, but only in a cinematic sense and easily open to manipulation. These technologies introduce opportunities, but also bring new dilemmas for architects more accustomed to permanence, durability and stability.

UN Studio has also employed the reflective properties of light and colour in a collaboration with adhesive manufacturer 3M (the originators of yellow stickies). 3M had developed a product originally intended for wrapping perfume bottles, but it had not turned out as expected, and was lying idle in their laboratory.[5] The architects used the material embedded into layers of glass, to wrap the courtyard surfaces of a new office development in the new town of Almere, north of Amsterdam. The film shimmers like the wing of a butterfly. Further, and most notably, the perception of the reflected colour is altered dramatically depending on the angle of the viewer and the ambient light conditions. While the surfaces of the buildings at the perimeter of the urban block are clad in a shiny but plain grey aluminium, the plan form uses oblique slashes across the centre of the urban block to reveal a highly colourful series of voids snaking through the centre of the site. The building appears inside out, bland and homogenous on the outside, vibrant and astonishingly dynamic on the inner faces. The entrances to most of the individual buildings are set inside the block, forcing the visitor to penetrate the exterior and discover the colours within.

The building skin is a pure experiment into the interaction of colour and light. Walking through the exterior courtyard, the surfaces appear to change from vivid red to blue, green, orange and yellow, utterly transforming the appearance of the building within a few paces. Viewed perpendicular to the skin, a clear deep red may change to a green, yellow or blue when seen obliquely. It is hard for the mind to accept that this is all one material. The reflected light from the panels is itself so intense that it is diffuses across the pavements and internal courtyard surfaces, heightening the transformative effect.

Without the material, and the resultant colour, one could argue that this is a fairly soulless perimeter office building. The courts are barren, without any form of softening landscape. It is a disconcerting experience to dwell in the voids, feeling as if being constantly observed by acres of mirrored sunglasses. Inside the buildings, now occupied by Social Security and Tax offices, the coloured light bounces around the faces of the courtyard and into the edges of the rooms. The reflected colour completely transforms the appearance of the building, through the movement of clouds, light and the position of the viewer. Unlike the examples in Seoul and Kaohsiung, the joy

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3 Taken from an interview with Ben van Berkel and Caroline Bos and the author, Amsterdam, September 2009

4 The term 'Brandscapes', is thought to have been introduced by John Sherry, in 1986 conference of the Association for Consumer Research, in Toronto, Canada. Subsequently used by Klingmann, Anna (2007) *Brandscapes: Architecture in the Experience Economy*.

5 The material now known as *3M Radiant Colour/Light Film*

UN Studio, La Defense Offices in Almere, Netherlands (2004) Photo: Author

of this colour is that it is generated entirely by daylight. Although concentrated, it is more subtle, less controlled, not programmed but utterly contingent on the vagaries of natural light.

Gilles Deleuze considered this to be entirely the role of space. (Pavoni, 2010 : 9). Space is more than fixed geometry, more than simple built form. Architecture is multi-dimensional, although stable, it is experienced in a transient way and should allow multiple subjective readings and experiences. In these examples, colour generated as light activates and transforms space and surface. Here, architecture is moving, rather than static, constantly changing, contingent, de-materialising and re-constituting.

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Address: Fiona McLachlan, Head of the Edinburgh School of Architecture and Landscape Architecture, University of Edinburgh, 20 Chambers Street, Edinburgh EH1 1JZ, UK
E-mail: F.McLachlan@ed.ac.uk